Mr. J. S. Rowell Clark, Esq
from the Academy
through Dr. Leidy
14

PROCEEDINGS

OF THE

ACADEMY OF NATURAL SCIENCES

OF PHILADELPHIA.

VOL. III. NOV. AND DEC., 1847. No. 12.

Stated Meeting, Nov. 2, 1847.

VICE PRESIDENT MORTON in the Chair.

DONATIONS TO MUSEUM.

A living specimen of Ursus Americanus, from Chicago, Michigan, and a specimen in spirits of Salamandra venenosa, from Michigan. Presented by Mr. Lewis J. Germain.

Numerous specimens, in spirits, of Coleopterous insects ; also Achatina perdrix, and a serpent of large size, probably new, from Africa. Presented by Rev. T. S. Savage.

Fine specimen of Squilla ———, from the West India coast. From Captain H. S. Baker.

Stigmaria ———, from Lycoming county, Pennsylvania. From Mr. J. R. Pollock, of Philadelphia.

Several varieties of Copper Ore, from the Flemington Copper Mine, N. J. From Peter A. Browne, Esq.

Dr. Morton deposited six elongated heads of old Peruvians, from the Tombs at Areca, another similar one through Dr. Dickeson, and the head of a Mexican officer slain in one of the recent engagements.

DONATIONS TO LIBRARY.

Fauna der Vorvelt mit steter Berucksichtigung der lebenden Thiere-Monographisch dargestellt von Dr. C. G. Giebel. 8vo. Leipzig, 1847. From Mr. John Lambert.

Resultate geologischer, anatomischer, und zoologischer untersuchungen über das unter dem namen Hydrarchos, von Dr. A. C. Koch, zuerstnach Europa gebrachte und in Dresden ausgestellte grosse fossile skelett. Von Dr. C. G. Carus, &c. Folio. Dresden und Leipzig, 1847. From the same.

Results of Astronomical observations, made during the years 1834–5–6–7 and 8, at the Cape of Good Hope. By Sir John F. W. Herschel. 4to. London, 1847. From the Duke of Northumberland, through the Author.

Oken's Isis. Nos. 5 and 6, for 1847. Deposited by Dr. Wilson.

An attempt to discover some of the laws which govern animal torpidity and hybernation. By Peter A. Browne, L. L. D. 8vo. pamphlet. Philadelphia, 1847. From the Author.

Dr. R. E. Griffith deposited the following large collection of works:

The elements of experimental Chemistry. By Wm. Henry, M. D. Fourth American edition. 8vo. Philadelphia. 1847.

Tabula affinitatum animalium, &c. Auctore Johanne Hermann, M. D. 4to. 1783.

A Dictionary of Chemistry. By William Nicholson. 2 vols. 4to. London, 1795.

The Cabinet of Natural History, and American rural sports, with illustrations. 2 vols. 4to. Philadelphia, 1830 '32.

The universal gardener and botanist, or a general dictionary of gardening and Botany. By Thomas Mawe and John Abercrombie. 2d edition. 4to. London, 1797.

The theory of the Earth: containing an account of the origin

PENNSYLVANIA
STATE LIBRARY

of the Earth, and of all the general changes which it hath undergone, or is to undergo 'till the consummation of all things. Folio. London, 1684.

Mélanges intéressans et curieux, ou abrégé d'histoire naturelle, morale, civile, et politique de l'Asie, l'Afrique, l'Amerique, et des terres polaires : par M. R. D. S * * 5 vols. 12mo. Paris 1763.

Mêlanges d'histoire naturelle : par M. A. D. 2 vols. 12mo. A. Lyon, 1763.

Physionomies nationales des Peuples, ou les traites de leur visage comparée à leur mœurs et caracteres. 12mo. Paris.

Histoire naturelle des animaux par Pline. Traduction nouvelle avec le text en regard, par P. C. B. Gueroult. 3 vols. 8vo. Paris, 1802.

An historical disquisition on the Mammoth, and other tracts on Natural History, in one vol. 8vo.

Fossils arranged according to their obvious characters, with their history and descriptions, &c. By J. Hill, M. D. 8vo. London, 1781.

Familiar letters to Henry Clay, of Kentucky, describing a winter in the West Indies. By Joseph John Gurney. 8vo. New York, 1840.

The Philosophy of Natural History. By William Smellie. 8vo. Philadelphia, 1791.

Chemical manipulation, being instructions to Students in Chemistry, &c. By Michael Farraday, F. R. S., &c. First American from last London edition. Edited by J. K. Mitchell, M. D. 8vo. Philadelphia, 1831.

The Economy of Nature, explained and illustrated on the principles of modern Philosophy. By G. Gregory, D. D. 3 vols. 8vo. London, 1796.

A system of Chemistry of inorganic bodies. By Thomas Thomson, M. D. 7th edition. 2 vols. 8vo. London and Edinburgh, 1831.

A system of Vegetables, according to their classes, genera, &c., in 2 vols. 8vo. Translated from Murray's Edition of

Linneus' Systema Vegetabilium. By a Botanical Society at Lichfield. Lichfield, 1793.

Animal Chemistry, with reference to the Physiology and pathology of Man. By J. Franz Simon. Translated and edited by George E. Day, M. A. 8vo. Philadelphia, 1845.

Memoirs of the life of Dr. Darwin. By Anna Seward. 8vo. Philadelphia, 1804.

Zoonomia, or the laws of organic life. By Erasmus Darwin, M. D. 2 vols. 8vo. New York, 1796.

Principes de Physiologie, ou introduction á la science experimentale, philosophique, et medicale de l'homme vivant. Par Charles Louis Dumas. 2d edition. 4 vols. 8vo. Paris, 1806.

Concours sur l'acetification de l'Alcool; question proposée par la Société de Pharmacie de Paris. 8vo. Paris, 1838.

Observations on the Climate in different parts of America, compared with the climate in corresponding parts of the other continent, &c. By Hugh Williamson, M D. 8vo. N. Y. 1811.

Manuel du fabricant de produits chimiques, &c.: par M. L. S. Thillaye. 2 vols. 12mo. Paris, 1829.

Georg. Casp. Kirchmaieri de Paradiso, &c. 12mo. 1662.

Arcana of Science and Art, or an annual register of useful inventions and improvements, &c. 2 vols. 12mo. London, 1837–38.

The Year Book of Facts in Science and Art, &c. By the editor of the Arcana of Science. 12mo. London, 1839.

A practical Essay on the analysis of Minerals. By Frederick Accum. 1st American edition. 12mo. Philada., 1809.

The Young Chemist's Pocket Companion. By James Woodhouse, M. D. 12mo. Philada., 1797.

The Chemical Pocket Book. By James Parkinson. With an Appendix, by James Woodhouse, M. D. 12mo. Philada., 1802.

Outlines of Medical Botany. By Hugo Reid. 2d edition. 12mo. Edinburg, 1829.

A popular treatise on Vegetable Physiology. 8vo. Philada. 1842.

Organic Chemistry in its applications to Agriculture and Physiology. By Justus Liebig, M. D.; edited by Lyons Playfair, M. D. 1st American edition, by John W. Webster, M. D. 8vo. Cambridge, 1841.

Expériences pour servir a l'histoire de la géneration des animaux et des plantes. Par M. l'Abbe Spallanzani. 3 vols. 8vo. Paris, 1787.

The Bridgewater Treatises. Treatise IV. The Hand, its mechanism and vital endowments. By Sir Charles Bell, F. R. S. &c. 12mo. Philada., 1833.

The Contemplation of Nature, translated from the French of C. Bonnet. 2 vols. 12mo. London, 1766.

A Classical Tour through Italy, in 1803. By the Rev. John Chetwood Eustace. 4th edition. 4 vols., 8vo. Leghorn, 1818.

An introduction to the Science of Botany, chiefly extracted from the works of Linnæus. By the late James Lee. 4th edition. 8vo. London: 1810.

A manual of Analytical Chemistry. By Henry Rose. Translated from the German, by John Griffin. 8vo. London: 1831.

An epitome of Chymical Philosophy. By James Freeman Dana. 8vo. Concord, N. H., 1825.

Nouveau systéme de Chimie organique, fondé sur des mèthodes nouvelles d'observation. Par F. V. Raspail. 8vo. Paris: 1833.

Museum Calonnianum. Specification of the various articles which compose the magnificent Museum of Natural History, collected by M. de Calonne, in France. 8vo. London, 1797.

Rambles in Europe in 1839, &c. By William Gibson, M. D., 12mo. Philada.: 1841.

An expedition of discovery into the interior of Africa, through the hitherto undescribed countries of the great Namaquas,

Boschmans and Hill Damaras; conducted by Jas. Edward Alexander, K. S. S. 2vols. 12mo. Philada., 1838.

Dr. Morton read an extract from a letter from Dr. Falconer, of the East India Company, in relation to some casts of valuable Sivalik Fossils, which he stated could be obtained by the Academy from the East India House upon applying to the latter through the American Minister at London. The application was accordingly ordered to be made through the Corresponding Secretary.

Dr. Dickeson made some observations on the mode of compression of the cranium in use among the Choctaw Indians, and the supposed object of the same.

Stated Meeting, Nov. 9, 1847.

Vice President Morton in the Chair.

DONATIONS TO MUSEUM.

Dr. Wilson presented the following mounted Mammalia:—Semnopithecus comatus, (2 specimens,) Ateles pentadactylus? (2 specimens,) Cercopithecus pithecia, C. egnomalgus, Inuus nemistrinûs, Sebus apella, Lemur ———, Harpale rufimanus, Heazus tardigradus, Viverra mellivora, V. ——, (5 specimens,) Mustela sorella, M. Hernani, M. erminea, Gulo orientalis, Tapirus——, Dasypus tricinctus, Sciurus palmarum, S. plantani, S. melanotus, S. Bergianus, S. omnicolor, (2 specimens,) S. ——, Pteromys sagitta, P. ——, Hylagale Javanica, (2 specimens,) Pteropus minimus, P. edulis, Galeopithecus variegatus, Vespertilio serotinus, V. pipistrellus, V. auritus, V. pictus, V.—— (2 specimens,) Sorex araneus, and four Marsupialia. Also the following Saurians:—Polychrus marmoratus, Tejus

ameiva, T. monitor, Platydactylus vittatus, P. guttatus, Iguana delicatissima, Tupinambis elegans, (2 specimens,) T. bivittatus, T. ornatus, Crocodilus ——, (young,) Chelonia viridis, C.——, Emys serratus, E. ——, Testudo ——, and two exuviæ of Coluber constrictor. Also several fragments of wood bored by a large Teredo, nests and eggs of an Edila, from the East Indies, nest of Parus caudatus, from France, and a species of Spongia, from the E. Indies.

Mr. J. R. Pollock, of Philadelphia, presented a beautiful and remarkably pure specimen of the newly made comb of the honey bee.

Dr. Morton deposited crania of Ursus arctos, of Sweden, and of the Antilope Americana, of New Mexico.

DONATIONS TO LIBRARY.

Foraminiferes fossiles du Bassin tertiaire de Vienne, decouverts par son Excellence le Chevalier Joseph de Hauer, et décrits par Alcide D'Orbigny. 4to. Paris, 1846. From the Author.

American Journal of Agriculture and Science. No. 18, Oct. 1847. The Editors.

Statistics of South Carolina, including a view of its natural, civil, and military history, general and particular. By Robert Mills. 8vo. Charleston, S. C., 1826. In exchange.

The following works were deposited by Dr. Wilson:

Reports on Zoology for 1843, '44, (Ray Society.) 8vo. London, 1847.

Narrative of the Surveying voyage of H. M. S. Fly, commanded by Capt. F. P. Blackwood, R. N., in Torres Strait, New Guinea, and other islands of the Eastern Archipelago, during the years 1842, '46, together with an excursion into the interior of the eastern part of Java. By J. Beete Jukes, M. A., &c. 2 vols. 8vo. London, 1847.

Figures of Molluscous animals, selected from various authors;

etched for the use of students, by Maria Emma Gray. vol. 1. 8vo. London, 1847.

Molluscous animals, including shell-fish, &c. By John Fleming, D. D., &c. 8vo. Edinburg, 1837.

Elements of Physiophilosophy. By Lorenz Oken, M. D., From the German, by Alfred Tulk, (Ray Society,) 8vo. London, 1847.

The Naturalist's Library. Vols. 7, 8 and 10, of Ornithology. 12mo.

Geology for beginners; comprising a familiar explanation of Geology and its associate sciences, &c. By G. F. Richardson, F. R. S. 8vo. London, 1843.

The Cabinet Cyclopedia; conducted by the Rev. Dionysius Lardner, and others. Birds, by William Swainson. Vols. 1 and 2. Geology, by John Phillips. Vols. 1 and 2. 12mo.

Report of the Geology of the county of Londonderry, and of parts of Tyrone and Fermanagh. By J. E. Portlock, F. R. S., &c. 8vo. Dublin, 1843.

Proceedings of the Geological Society of London. Vols. 1, 2, 3 and 4. 8vo.

Fossilia Hantoniensia collecta et in Musæo Brittannico deposita a Gustavo Brander. 4to. London, 1766.

The Annals and Magazine of Natural History, No. 132, Sept. 1847.

Observations on some peculiarities observable in the structure of the Gannet (Pelecanus Bassanus;) and an account of a new and curious insect, discovered to inhabit the cellular membrane of that bird. By George Montagu, Esq., F.R.S., 8vo. pamphlet.

Dalman's Trilobites. 1 vol. 4to.

Nomenclator Zoologicus, continens nomina systematica generum animalium tum viventium quam fossilium, &c. Auctore L. Agassiz. 4to. Soloduri, 1847.

The Genera of Birds. By George Robert Gray. Part 40. 4to.

The Genera of Diurnal Lepidoptera. By Edward Doubleday, F. L. S. Part 11. 4to.

A natural history of fossils. By Emanuel Mendes da Costa. Vol 1. Part 1. 4to. London, 1757.

An introduction to Geology. By Robert Bakewell. 8vo. 2d American edition, from 4th London. New Haven, 1833.

Bartlett's Index Geologicus (chart.)

A history of the fossil insects in the secondary rocks of England. By the Rev. Peter Bellinger Brodie, M. A., &c. 8vo. London, 1845.

The Quarterly Journal of the Geological Society of London. No. 11. August, 1847.

Fossils of the Tertiary formations of the United States. By T. A. Conrad. Nos. 1, 2, 3.

Geological Survey of Pennsylvania. 1st, 2d, 3d, 4th and 5th Annual Reports. By Henry D. Rogers, State Geologist.

Report of the Geological reconnoisance of the State of Virginia. By Wm. B. Rogers. Philada., 1836.

Coloured illustrations of the eggs of British Birds, accompanied with descriptions of the eggs, nests, &c. By Wm. C. Hewitson. 34 Nos. 8vo. London.

Histoire naturelle des Crustacés fossiles, &c.; les Trilobites, par Alex. Brongniart; les Crustacés proprement dits, par Anselme Gaëton Desmarest. 4to. Paris, 1822.

Description des animaux fossiles qui se trouvent dans le Terrain Carbonifére de Belgique. 2 vols. 4to. Liege, 1842, '44.

Fauna Boreali-Americana; or the Zoology of the northern parts of British America. By John Richardson, M. D., F. R. S., assisted by Wm. Swainson, Esq., and the Rev. Wm. Kirby. 4 vols. 4to.

Transactions of the Geological Society of London. 1st series, complete in 5 vols. 4to. 2d series. Vols. 1, (part 2,) 2, 3, 4, 5 and 6, and parts 1, 2 and 3 of vol. 7. 4to.

Icones fossilium sectiles. 4to. pamphlet.

Beiträge zur Flora der Vorwelt. Von August Joseph Corda. Folio. Prag, 1845.

An account of the English colony in New South Wales, from its first settlement in January, 1788, to August, 1801, &c. By Lieut. Col. Collins. 4to. London, 1804.

Narrative of an expedition to explore the river Zaire, usually called the Congo, in South Africa, in 1816, under the direction of Capt. J. K. Tuckey. R. N. &c. 4to. London, 1818.

Journal of a voyage for the discovery of a north-west passage from the Atlantic to the Pacific; performed in the years 1819-20, in H. M. ships Hecla and Griper, under the orders of Wm. Edward Parry, R. N., F. R. S. 4to. London, 1821; and supplement, 4to. London, 1824.

Journal of a second voyage, &c., in the years 1821, '22, '23, in H. M. ships Fury and Hecla, under the command of Capt. Parry. 4to. London, 1824; and appendix, 4to. London, 1825.

Journal of a third voyage, &c., performed in 1824, '25, in H. M. ships Hecla and Fury, under the command of Capt. Parry. 4to. London, 1826.

The North Georgia Gazette and Winter Chronicle. 4to. London, 1821.

An account of experiments to determine the figure of the earth, by means of the pendulum vibrating seconds in different latitudes, as well as on other subjects of philosophical inquiry. By Edward Sabine. 4to. London, 1825.

Letters were read from the Chevalier de Hauer, dated Vienna, Sept. 22, 1846, presenting the work, "Foramineféres fossiles du Bassin Tertiaire de Vienne."

And from Mr. John Fehlands, dated Hamburg, Oct. 14th, 1847, acknowledging the receipt by Dr. Tschudi of Vienna, of the Vols. of the Proceedings, sent to him by resolution of the Academy.

A paper containing a description of a new Unio, by Mr.

Haldeman, was read and referred to a committee consisting of Dr. Griffith, Dr. Wilson, and Mr. Phillips.

Dr. Leidy made the following remarks upon the very slow destructibility of animal tissues in certain states.

The great length of time that animal matter may be preserved in a recent form, in ice, is so well known as hardly to need reference to the instance of the Siberian mammoth.

Bones and teeth, under ordinary circumstances, resist the influence of exterior agencies better than any of the other tissues, and then follow epidermic tissue, fibrous tissue, &c. Bones of the mastodon have long since been determined to contain almost as much gelatin as those of recent animals, and I have lately detected, by chemical analysis, the existence of animal matter in a portion of a vertebra of the Basilosaurus, a fossil of the Eocene tertiary period. A portion of this animal matter, preserved in alcohol, I exhibit to the Academy. It has a floculent appearance, contains no gelatin, but readily carbonizes and takes fire, giving out an odour characteristic of burning animal substances; the ash it leaves behind contains a large proportion of oxide of iron.

If not exposed to the influence of air and moisture, bones will retain their animal matter for an indefinite period of time. We have, in the collection of the Academy, bones of the extinct Megalonyx, from White Cave, Tennessee, which look as fresh as though prepared but yesterday. But when they are exposed to air, and to alternations of dryness and moisture, or a constant but slightly moistened state, without the presence of carbonate of lime, silex, or oxide of iron, which tend rather to the preservation than destruction of the animal matter contained in them, the animal matter is gradually and almost wholly removed, leaving nothing but the earthy constituents, which, if they do retain the original form, readily crumble to pieces from the slightest violence. Of the softer animal tissues, the preservation of insects in amber, a resin belonging to a very ancient flora, is well known. But one of the most remarkable instances occurring under ordinary circumstances, which has been presented to my notice, is the existence of portions of fibrous membrane and articular cartilage, attached to some of the bones of the Megalonyx before spoken of, as exhibited in these specimens. By examining this piece of fibrous membrane, taken from one of the bones, it will be found to have retained all the characteristics of perfectly recent membrane; it imbibes moisture and becomes as flexible as if fresh. The articular cartilage has become hard and brittle and yellow in colour, and looks like resinous matter. A fragment beneath the microscope presented all the characters of

that form of cartilage, as represented in this drawing, which I took from it. The cartilage corpuscles are well preserved and very distinct. By soaking it in water it does not become tough and flexible, as in recent cartilage, but swells up and forms a thick jelly, which, after a few hours, dissolves in the water, and colours it yellow. A change has taken place in it, corresponding to that which occurs in most organic tissues when constantly kept in the dry state. The atoms or molecules undergo a change of relation in regard to each other, or new chemical combinations take place without destroying the form of the dried object, but destroying the power of its resuming its original form. The change is an exceedingly slow one; in many instances, after centuries have elapsed, no perceptible change has taken place. An instance in point was lately presented to us by Dr. Morton, who put a dried ear of an Egyptian mummy of the time of the Pharaohs, into water, in the hope that it would resume its former proportions, but instead of so doing, for a few days it appeared to undergo no change, except colouring the water yellow, as in the case of the articular cartilage of the Megalonyx. It then suddenly underwent rapid decomposition, and in the course of a day entirely disappeared; the solution for two days exhaled a putrid odour, which then disappeared, leaving the fluid coloured yellow and without further change.

A report was presented from the committee appointed on the subject of exchanges with M. Vattemare, proposing to forward to him for works lately received two copies of Vols. 1 and 2 of the Proceedings; and also to place in his hands for further exchanges, additional copies of the same, which was accordingly ordered.

Stated Meeting, November 16, 1847.

Vice President Morton in the Chair.

DONATIONS TO MUSEUM.

Cytherea, from California, presented by Dr. Joseph Wilson, U. S. N.

Boa constrictor, 12 feet long. Presented by Messrs. Raymond & Waring, through Dr. Watson.

Several living Opossums, from Dr. C. D. Meigs, Dr. Watson, and Dr. Wilson.

Heads of echinal spines from the Sivalik Hills. Presented by Dr. Morton.

DONATIONS TO LIBRARY.

Iconographie Ornithologique ; par O. Des Murs. Liv. 9. 4to. Presented by Mr. Edward Wilson.

Revue Zoologique. Nos. 7 and 8, 1847. Deposited by Dr. Wilson.

The National Magazine and Industrial Record. Edited by Redwood Fisher. 18 Nos. complete. New York, 1845–46. From the Author, through Mr. Thomas Fisher.

The following extract from a letter from Prof. Haldeman, dated 11th November, 1847, was read.

"Herpetologists now suppose that Salamandra *erythronota*, Green, and S. *cinerea*, Green, are opposite sexes of the same species. The two are frequently found under the same stone or log, but I have never seen one with intermediate characters. I recently found six individuals and submitted them to dissection. Four of *cinerea* opened successively, proved to have gravid ovaries, and two of *erythronota* to be males; but to be certain, I submitted the seminal matter to microscopic examination, and found spermatozoa, although not fully developed. Subsequently I found two *erythronota* with gravid ovaries, so that not being sexual, and no intermediate forms having been observed, I am induced to believe that Green was right in proposing two species."

Stated Meeting, Nov. 23, 1847.

Vice President MORTON in the Chair.

DONATIONS TO MUSEUM.

Fossil Saurian bones in a matrix of conglomerate, comprising several vertebræ, parts of paddle, &c., probably an undescribed extinct animal. Found near Hossack Creek,

Berks Co., Pa., five or six feet below the surface. Deposited by Dr. Joel Y. Shelley, of Berks county.

Specimens in spirits, of Leptophis oestivus, and Coluber eximius. Presented by Dr. Pennock.

Fossil bones of a new genus of extinct Ruminants, consisting of the cranium and parts of a humerus, ulna, and radius. Deposited by Mr. Joseph Culbertson, of Chambersburg, Penn.

Cranium of Vulpes fulvus. Deposited by Dr. Morton.

Native silver from Guanaxato, Mexico. Presented by Dr. Griffith.

Specimen of Loxia cardinalis. From Mr. Phillips.

DONATIONS TO LIBRARY.

American Journal of Science and Arts. New series. Vol. 4. No. 12. From the Editors.

On the inhalation of the vapour of ether in surgical operations. By John Snow, M. D. 8vo. London, 1847. From Mr. Lambert.

A Medico-botanical catalogue of the plants and ferns of St. Johns, Berkley, S. C. An inaugural thesis for the degree of M. D. By Francis Peyre Porcher. 8vo. pamphlet. Charleston, S. C., 1847. From the author.

Literary Record and Journal of the Linnean Association of Pennsylvania College. Vol. 4. No. 1. From the Association.

The Geognosy of the Island of St. Helena, in a series of views, plans, and sections, with remarks and observations. By Robert F. Seale. Folio. London, 1834. From Mr. Saml. Ashmead.

Dr. Wilson deposited the following:

An analysis of the British Ferns and their allies. By G. W. Francis, F. L. S. 2d edition. 8vo. London, 1842.

A history of British Ferns and allied plants. By Edward Newman, F. L. S. 8vo. London, 1844.

The Natural history of Carolina, Florida, and the Bahama Islands, &c. By Mark Catesby, F. R. S. 2 vols. Folio. London, 1731.

The Genera of Diurnal Lepidoptera. By Edward Doubleday, F. R. S. Part 12. 4to.

The Genera of Birds. By Geo. Robert Gray, F. R. S. Part 41. 4to.

The Annals and Magazine of Natural History. No. 133.

An outline of the Geology of Norfolk. By Samuel Woodward. 8vo. Norwich, 1833.

The Zoologist's Text Book, &c. By Capt. Thomas Brown. 2 vols. 12mo. Glasgow, 1832.

Mémoires presentés a l'Academie Imperiale des Sciences de St. Petersburg. Vols. 1--5, and vol. 6, No. 2. 4to.

Dr. Griffith deposited the following:

Symbolæ ad historiam Heliceorum. Auctore Dr. Lud. Pfeiffer. 8vo. Casselis, 1841.

Philosophie Anatomique; Des Organes Respiratoires sous le rappport de la determination et de l'identité de leurs piéces osseuses; par M. le Ch. Geoffroy St. Hilaire. 1 vol. 8vo. and Atlas. 4to. Paris, 1818.

The Naturalist's Library: conducted by Sir Wm. Jardine; Mammalia 6 vols.; Ornithology, 8 vols.; Icthyology, 1 vol. Entomology, 4 vols. 12mo.

Species général et Iconographie des Coquilles vivantes, &c. Par L. C. Kiener. 8vo.

A letter was read from Mr. Richard Brown, of Nova Scotia, addressed to Prof. Johnson, dated Sydney Mines, 27th Oct. 1847, containing the following in relation to some Fossil fruits from the coal seam of that district:

These Fossils were found in one part of the mine only, scattered over an area of three or four acres, in some places so thick that five or six might be found in one square yard. They lie in the Shale Roof immediately in contact with the Coal Seam.

Upright stems of Lepidodendra and Sigillariæ, with Stigmaria-like roots, are frequent in the same area, the fruits being sometimes found under their roots. I have broken up several of these Fossils, and found decisive marks of internal structure exhibiting their membranes of carbonaceous matter, and small pipes of Iron Pyrites terminating in scars on the external surface, supposed to be seed cells. I cannot find any described fossils resembling them more nearly than the Fruit of Podocarya from the oolite, in Buckland's Bridgewater Treatise.

A letter was read from Mr. Wm. Thompson, addressed to Dr. Griffith, dated Tunbridge Wells, Oct., 1847, announcing his intention to present certain Mollusca nudibranchiata, in spirits, and British Echinodermata and marine Algœ, and also some fossils, to the Academy.

Dr. Leidy read a paper "On a new genus and species of Fossil Ruminantia, Poëbrotherium *Wilsonii;*" which was referred to a committee composed of Drs. Pickering, Bridges, and Morton.

Dr. Hallowell communicated a paper on the "Horned Viper of Western Africa," with a figure. Referred to Prof. Haldeman, Dr. Pickering and Dr. Leidy.

Professor Johnson exhibited a specimen of a boiler sediment derived from a steam boiler used at Burlington, New Jersey, which uses clear spring water. It is dark brown, has a specific gravity of 1.235, contains 34.88 per cent. of earthy residue, and 65.12 per cent., of combustible material, melting only at 900—1000 degrees, though it softens at 260, and exhales an empyreumatic odour at 430°; and at 450° becomes reddish-brown and brittle. The sediment pulverized and boiled in alcohol gave, by slow evaporation, an oily substance, which separates in a white hydrated condition—but the water is lost below the boiling point of alcohol, leaving the oil a reddish-brown, capable of softening at 150°, and becoming fluid at 180°. The earthy matter contains carbonate of lime and magnesia, as well as silicate of alumina and oxide of iron.

Prof. Johnson also offered some observations on the fossil bones from Dr. Joel Y. Shelly, deposited this evening, which, from the appearance of the rock adhering to the specimens, he judged to belong to the formation which overlies the edges

PENNSYLVANIA
STATE LIBRARY

of the Silurian rocks of the south mountains, and which is believed to be of the same age as the so-called Potomac marble.

Meeting for Business, Nov. 30, 1847.

Vice President Morton in the Chair.

The Committee on Dr. Hallowell's paper, on the Horned Viper of Western Africa, reported in favour of publication:

On the Horned Viper of Western Africa.

By Edward Hallowell, M. D.

Cerastes, Wagler.

Cerastes nasicornis.*

Syn. Coluber nasicornis. Shaw, General Zoology, p. 198.

Characters.—Head short and thick, two horns upon the snout, mouth large; a series of oblong quadrilateral bands upon the back, margined with triangular spots of black; a row of dark coloured blotches upon each side of the animal in contact with the abdomen; between these and the triangular lateral blotches, other triangular dark coloured spots with their bases toward each other; tail short.

Description.—Physiognomy very repulsive; *head* short and thick, depressed, presenting two horns, each four lines in length upon the snout; opening of the mouth large, extending to within five lines of the posterior margin of the occiput; two large and powerful fangs on each side of the upper jaw; head covered with rhomboidal, hexagonal, and polygonal scales which are carinated; the scales are largest upon the occiput and sides of the head posteriorly; nostrils large, two lines in diameter, presenting upward and slightly backward; eyes rather small, latero-superior, on a line with the nostrils, and three lines posterior to them, slightly projecting, looking outward and a little upward; palatine and infra maxillary teeth recurved, sharp, pointed and strongly developed; tongue long, bifid

* Misprinted *Arastes* in the Proceedings, vol. ii. p. 250.

enclosed in a sheath; thirteen plates margin the upper jaw on the right, and fourteen on the left side of the head, exclusive of the rostral; the tenth on the right, and the eleventh on the left side are the largest; the shape of both is pentangular; the rostral plate is also pentangular, and incurvated inferiorly; there are sixteen plates along the margin of the lower jaw, exclusive of the mental, which is broad and triangular; the anterior geneials are oblong quadrilateral, the posterior, larger and rhomboidal. *Neck* contracted, quite slender compared with the body, which is somewhat cylindrical and very thick in the middle, becoming slender towards the tail; tail quite short; upper part and sides of neck, body and tail covered with very strongly carinated scales; many of these scales are truncated posteriorly.

Colour.—Upper part of head light brown ash colour; a dark coloured triangular blotch exists upon the side of the head, its apex touching the posterior margin of the orbit; another dark coloured blotch, an inch in length, extends along the margin of the lower jaw; chin and throat light straw colour, with numerous small black spots. A series of oblong quadrangular bands extends along the dorsum, commencing at the neck, and is lost upon the tail; in the young subject they are bordered with white; at each extremity is a dark triangular blotch, the apices of which touch each other; a row of dark coloured triangular blotches is also observed along the margins of the quadrangular bars, contiguous with which are other triangular spots, having their bases toward each other; these are not represented in the figure; there is also a row of triangular spots upon each side of the body, in contact with the abdomen: abdomen and under surface of tail straw colour, presenting numerous spots of black.

Dimensions.—Length of head 2 inches, 3 lines (Fr.); breadth posteriorly, 2 inches; length of tail, 5 inches 3 lines; length of body, 2 feet $8\frac{1}{2}$ inches (Fr.); greatest circumference of body, 8 inches 3 lines.

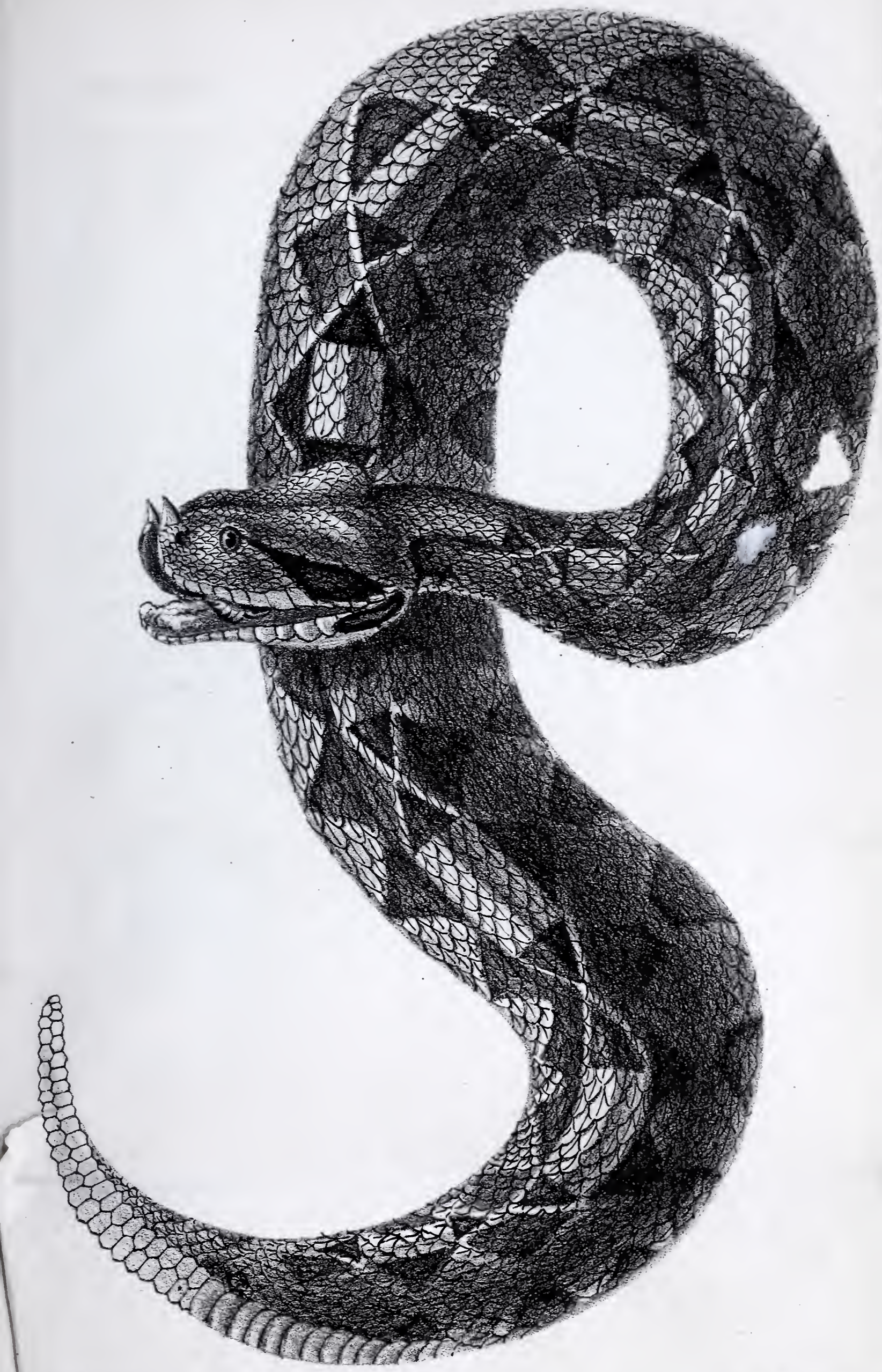
Abdominal scuta 128: Subcaudal 27, two of which are single, (the second and third from the anus,) the rest bifid.

Habitat.—Liberia, Western Africa. Specimen in the Museum of the Academy.

General Observations.—The animal from which the above description is taken, was presented to the Academy of Natural Sciences by Dr. Thomas S. Savage, Colonial Physician, and one of our Correspondents. The drawing was taken from a young animal, eighteen inches in length; the coloration, however, does not vary materially from that of the older specimen, except that the general tints are lighter, and in the points indicated. It has no resemblance to the Vipera cornuta, Auct., a beautiful figure of which is given in Dr. Andrew Smith's Illustrations of the Zoology of Southern Africa, plate 32.*

There can be no doubt, we think, that this is the animal figured by Shaw.

See Schlegel, Physiognomie des Serpens, tom. ii. p. 583, note.



J H. Richards. del.

On stone by R.H. Kern.

Cerastes Nasicornis.

and described under the name of Coluber nasicornis. The figure of Shaw does not represent the triangular spots at the extremities and sides of the quadrangular bars upon the back, and the form of the head is altogether different; he states, however, that "along the whole length of the back, is placed a series of yellowish brown oblong spots or marks, each of which is imbedded in a patch of black," which, although a somewhat loose description, evidently refers to the species under consideration. Many of the drawings in his Zoology, it is well known, are exceedingly incorrect. It is remarkable that an animal so hideous, and provided with weapons so destructive, should possess the beautiful robe which it presents to the eye. Why this animal, and others among the reptilia, should be thus endowed, is a mystery; for, judging from its formidable head, and powerful fangs, no reptile, not even the Crotalus, or Trigonocephalus, is so deadly. It is also remarkable that animals of this kind should exist in tropical countries associated with the most beautiful of Flora's productions

"Malheur au voyageur, (observes Mons. Spix,) qui ravi de toutes les richesses, qu'une nature enchanteresse déploie autour de lui, se promène dans ces forêts délicieuses, peuplées d'une variété immense d'arbres gigantesques, foule à ses pieds des tapis de verdure, enrichis de mille fleurs odoriférantes, qui parfument l'air et enivrent ses sens; qui élevant sa vue vers la voûte céleste, la porte sur des oiseaux d'un plumage magnifique dont il admire le singulier ramage; qui ailleurs remarque des essaims d'insectes cent fois variés, se confondant dans leur vol folâtre, et offrent á ses yeux déjà frappés d'étonnement, un spectacle nouveau; les rayons du soleil, en les faisant ressembler à autant de pierres précieuses, rélevent encore l'éclat de leurs couleurs déjà si multipliées;—malheur, dis-je, à l'impatient et zélé naturaliste, qui traverse des mers pour enrichir les sciences de ses observations, lorsqu'assis à l'ombre d'un arbre, aussi ancien que les siecles, couronné de fleurs magnifiques, telles que Paullinies, Orchides, Gouets, Bromelies et maintes autres, sert de tuteur à des lianes communes à divers arbres, qu'elles semblent réunir par leur formation de berceaux, servent d'échelles pour monter à leur sommet élevé, et qui nourrissent en même temps sur leurs troncs un nombre infini de végétaux, il étend sa main pour cueillir une fleur qui se trouve près d'elle, se sent tout à coup atteint de la morsure d'un Trigonocéphale qu'il à dérangé dans sa quiétude;—un poison mortel coule dans ses veines, décompose son sang et son être, et le fait périr d'une mort prématurée, qu'il trouve à trois mille lieues de sa patrie en récompense de son zéle.*"

An account of the habits of this, as well as those of other animals recently presented by him to the Academy, has been promised by Dr. Savage.

* Animalia nova, sive Serpentium Brasiliensium species novæ; par Jean de Spix, p. 51.

The Committee on Dr. Leidy's description of a new genus and species of Fossil Ruminants, reported in favour of publication:

On a new genus and species of Fossil Ruminantia: Poëbrotherium *Wilsoni.* By Joseph Leidy, M. D.

Indirectly through Mr. J. S. Phillips and the influence of Dr. S. G. Morton, the Academy has become the depository of a valuable and unique fossil, received through Dr. S. D. Culbertson of Chambersburg, Pa., from Mr. Joseph Culbertson.

As first received, it consisted of a mass of argillaceous limestone, having one side of a cranium of an animal exposed to view, which, by the patience of Dr. T. B. Wilson, was relieved of its matrix, and the lower extremity of the humerus, and the upper extremity of the ulna and radius of the right leg were also disclosed.

The top or vault above the orbits, and posterior part of the cranium are wanting, as are also the ossa nasi, ossa intermaxillaria, the part of the os maxillare inferius just anterior to the commencement of the symphisis, and the zygoma of the left side, but sufficient is left to characterize it as a remarkable genus of *Ruminantia*, very different from any that has been heretofore described.

The cranium belonged to a full grown or adult animal, but not an old one, as is indicated by the teeth.

In the upper jaw are seven molars, differing in this respect from any ruminant known, living or fossil. The posterior three molars, usually called true, present nothing very peculiar in their conformation. They are not so square as in *Cervus*, but are more like those of *Ovis*, being much broader than wide, so that they have a compressed appearance. The four crescents upon the crowns are quite simple. Externally these teeth present two and nearly plane surfaces, separated by an abrupt, salient, longitudinal ridge on a line with the notch separating the anterior and posterior pair of columns. Each of these surfaces has a longitudinal rounded ridge, more prominent upon the anterior than the posterior one, but neither so salient as the first. The antero-external border is also elevated or prominent, so that each of these teeth presents externally four longitudinal ridges. As is usual, these teeth are obliquely situated in the jaw, and the anterior part of one folds over externally or overlaps the posterior part of the one preceding it.

The anterior four molars or premolars are not more than half the length of the true molars, and differ among themselves so as to render it necessary to examine them separately. The posterior or fourth premolar has more the characteristics of a true molar, and it would probably not be wrong to consider it as an additional true molar. The crown presents four crescents, which are thicker than in the true molars, and the anterior and posterior pair are separated by a comparatively deeper notch. Externally the tooth

has four ridges corresponding to those of the true molars. The third premolar, or the one immediately preceding the last, has upon its crown a posterior pair of thick crescents, and an anterior cusp which has the appearance of being formed by the blending together of a pair of crescents. Externally it is trilobed, the lobes being separated by two concave depressions. It is shorter but broader than the last. The second premolar is compressed, faintly trilobed, and presents an elongated trenchant crown. The first premolar is the most remarkable characteristic of this cranium. It is separated from the others by a concave notch of .333 of an inch, and is on a line with the anterior mental foramen. It is implanted in the jaw by two fangs, which are divergent and placed one anterior to the other. The body is nearly as broad as the second premolar and is of a compressed pyramidal form, and the crown has a trenchant edge, the posterior and anterior part of which form an angle about its centre.

In the lower jaw, in the specimen, are six inferior molars in a closed row commencing .25 of an inch anterior to the corresponding six molars above, and continuing as far back as the latter. Besides these, and separated from them by a concave, descending notch of .45 of an inch, just anterior to the anterior mental foramen, or .15 of an inch anterior to the commencement of the symphisis posteriorly, is one half of an alveolus for an additional or seventh molar, which, when the specimen was first received, contained a portion of a fang, since mislaid. This additional molar in the lower jaw, is possessed by only one other known genus of *Ruminantia*; the *Dorcatherium*, of Kaup.

The crowns of the inferior molars are enveloped in the matrix in such a manner that they cannot be exposed without endangering the specimen. Externally the three true molars present their columns as sharply triangular prisms, as in *Ovis*, &c., and have no intervening points or cones, as in *Cervus*, *Dorcatherium*, &c.

The fourth premolar is tri-lobed externally, each lobe presenting a cusp towards the crown. The third and second are compressed, and the latter, I can perceive, has a trenchant crown.

The position of the molars, though resembling that of *Dorcatherium* considerably more than that of any other genus of *Ruminantia*, differs materially from it, for while the teeth reach to the symphisis in the latter, in the former they even extend anteriorly to its commencement.

From the foregoing description of the teeth, it will be perceived, that in the possession of a seventh molar in the upper jaw, in the position of the molars, and in several other minor peculiarities, this genus differs from all others heretofore known, and is well characterized, and I therefore propose for it the name of "Poëbrotherium."*

The base of the maxilla inferius presents a double curve, and has its anterior, central, and posterior parts very nearly on the same line, so as to give the lower part of the face an unusual degree of squareness. The angle is prolonged upwards and backwards into a well marked and hook-like pro-

* πόη *herba*, βρω *pasco*, θήρ *fera*.

cess, similar to that of many *Rodentia* and *Carnivora*, and exists in no other *Ruminantia* excepting the *Camelidæ*. Just above the base, where it curves downwards and backwards, is a short crescentic depression made by the attachment of the masseter muscle. The processus coronoideus has been proportionately about as long as that of the *Ovis aries*. The depression between the processus coronoideus and condyloideus upon the outer face of the ramus is comparatively deep, resembling more that of a carnivorous than a ruminating animal. The anterior mental foramen is placed immediately posterior to the commencement of the symphisis. About one inch and a half posterior to the latter foramen, on a line with the separation of the first true and last pre-molar, is another and smaller foramen, which is common to most Ruminants.

The ossa maxillaria superiora, below the situation of the ossa nasi, are very much depressed, so as to make this part of the face extremely narrow. Just anterior to this depression is a prominence resembling that produced by the root of the canine tooth of the *Moschus*, although I doubt very much whether this animal had such large canine teeth, if it had any at all, because of the very great narrowness of this part of the face, and the very advanced position of the first premolar.

The infra-orbitar foramen is farther back or more approached to the orbit than usual, being situated on a line above the fourth premolar.

The anterior part of the orbit is elevated so that the latter looks directly outwards.

The body of the os malæ is narrowed and elongated backwards. The zygoma proper, or that which is posterior to the frontal process of the os malæ, is short.

The meatus auditorius externus borders immediately upon the glenoid cavity. The tympanic bone is inflated and comparatively larger than in *Bos bovis*, *Cervus rufescens*, or any other Ruminant with which I am acquainted. Externally it projects beyond the face of the lower jaw and the meatus externus. Viewed posteriorly, it presents two parallel ampullæ, united anteriorly, and separated posteriorly by a notch, which terminates in a deep depression below for accommodating the processus styloideus.

The portion of os humeri, consisting of the articular surface for the elbow, and posterior sigmoid cavity, presents nothing peculiar.

The ulna, where it is broken off about three-fourths of an inch below the articulation, has nearly the same thickness as the radius, and probably has been proportionately larger than usual.

These bones belonged to an animal, rather less in size than the *Dorcatherium*.

The species I have designated *Wilsoni*, in honour of Dr. Thomas B. Wilson, the munificent patron of the Natural Sciences.

Probable habit of the animal.—From the evidences of considerable muscular strength in the posterior part of the inferior maxilla and the trenchant crowns of the anterior premolars, it might be supposed that the animal was adapted to eating flesh as part of its food, as was thought by Cuvier to have been probably the case with the *Anoplotherium gracile*, a pachydermous animal having

very similar characters, but I should think its general structure would entirely preclude the idea of its having been able to catch living animal prey, and doubt very much whether its food could have been other than vegetable. The anterior trenchant molars were more probably intended for cutting branches and twigs of bushes, or tough grasses, which afterward underwent a finer trituration with the true molars.

The position which the genus should occupy.—*Poëbrotherium* in its dentition approaches the *Ruminantia* to the *Pachydermata*, for in the number of the molar teeth and the trenchant nature of the anterior premolars it is closely allied to the Xiphodont *Anoplotherium*, while in the true molars it is characteristically Ruminant, and its position would, therefore, probably stand thus: *Dorcatherium*, *Poëbrotherium*, *Anoplotherium*.

Measurements of the head.*

	In.
Meatus auditorius externus to infra orbitar foramen	3.1
From point of hook-like process of inferior maxilla to anterior mental foramen	4.35
Greatest width of orbit	1.15
Narrowest part of face, below ossa nasi	.2
Width at the corono-condyloid depressions of inferior maxilla	1.6
Width at the coronoid processes	2.
Greatest width at the ossa tympani	2.1
Distance between ossa tympani	.375
Width of os tympanum	.85
Length of row formed by the posterior six superior molars.	2.5
Notch between the first and second superior premolars	.333
Length of row formed by the posterior six inferior molars	2.7
Notch between the first and second inferior premolars	.45

Measurements of superior molar teeth.

	Length.	Breadth.	Thickness.
7th molar	.375	.6	.2
6th "	.4	.55	.25
5th "	.333	.45	.275
4th "	.2	.375	.25
3rd "	.15	.4	.2
2nd "	.1	.35	.1
1st "	.15	.3	.075

Measurements of inferior molar teeth.

	Length.	Breadth.
7th molar	.3	.35
6th "	.3	.5
5th "	.25	.4
4th "	.15	.45
3rd "	.1	.35
2nd "	.1	.35

*The measurements are taken in English inches and parts of do.

Measurements from bones of fore-leg.

Transverse diameter of lower articular surface of os humeri . . .75
Antero-posterior diameter in depressed portion of same 45
Length of olecranon above the lowest part of the articular surface of the elbow 95

Explanation of the Figures.

No. 1. Cranium of Poëbrotherium Wilsoni.
2. View of the crowns of the superior molar teeth of the right side.
3. Posterior view of the tympanic bone.
4. Fragments of os humeri, ulna, and radius.

No. 5. Section of articular cartilage, from the articular surface of the head of the tibia of Megalonyx laqueatus, highly magnified, as described on page 313.
6. Portion of the crown taken from a fragment of a fossil horse tooth; see page 288. 328

The Monthly Report of the Corresponding Secretary was read and adopted.

ELECTION.

The Hon. George M. Dallas, Vice President of the United States, John H. B. McClellan, M. D, and John L. Ludlow, M. D., of Philadelphia, were elected *Members*.

Stated Meeting, December 7, 1847.

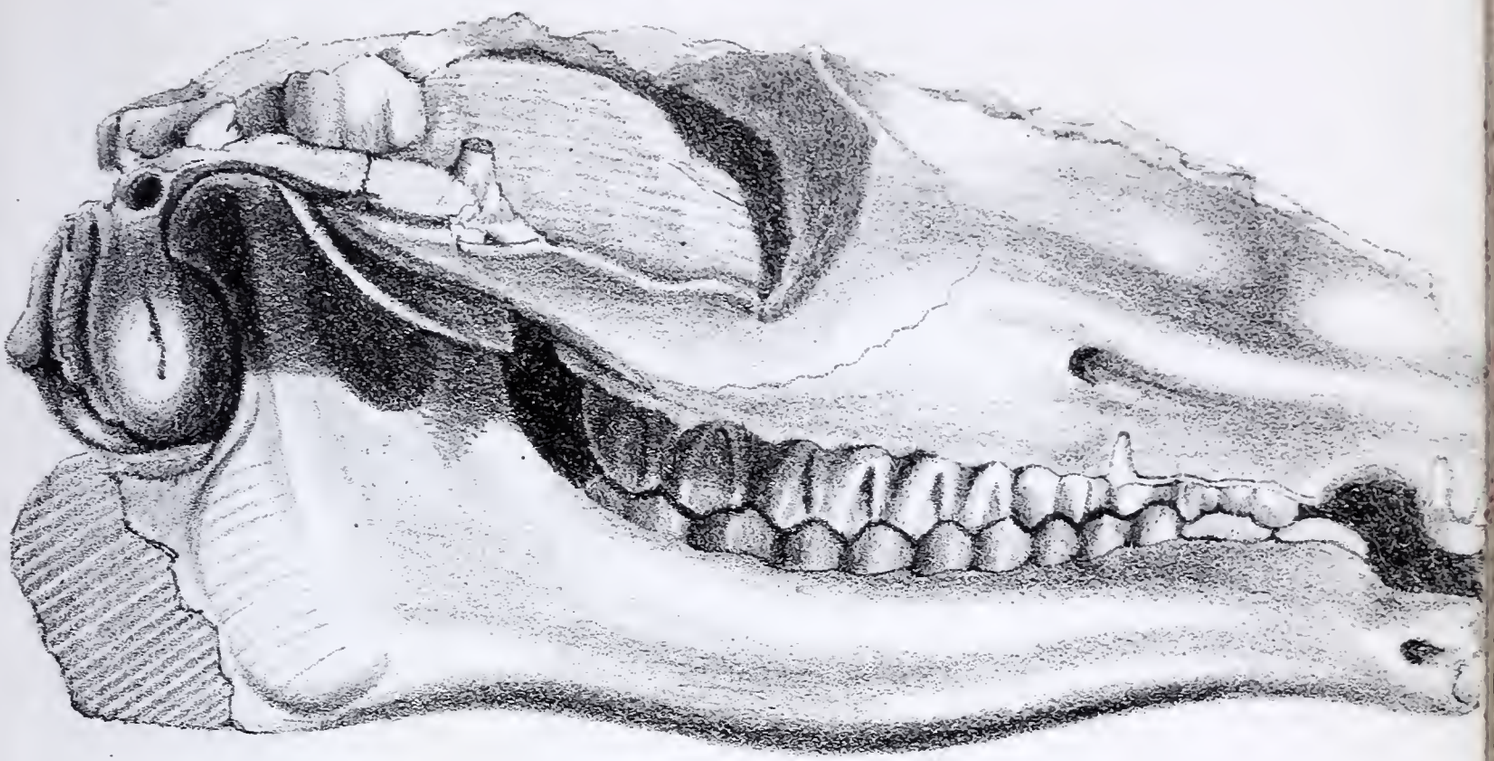
Vice President Morton in the Chair.

DONATIONS TO MUSEUM.

Pecten encyclicus Rav., from South Carolina. Presented by Dr. Ravenel, of South Carolina, through Dr. Morton.

Two Trilobites, and a cast of a third, from the vicinity of Cincinnati, Ohio. Presented by Dr. Dickeson.

Several specimens of Dialage, from Marple, Del. Co., Penn. From Dr. George Smith, through Mr. Cassin.



Jos. Leidy M.D. del.

On Stone by R.H. Laur.

Poëbrotherium Wilsoni, *Leidy*.

DONATIONS TO LIBRARY.

Handbuch der Entomologie von Hermann Burmeister. Vol. 5. 8vo. Berlin, 1847. From the Author, in exchange.

Disquisitio anatomica, nervum trigeminum partemque cephalicum nervi sympathetici Gadi lotæ Linn. cum nervis iisdem apud hominem et Mammalia comparans, &c. Auctor Eberhardus Julius Bonsdorff. From Dr. Morton.

Journal of the Academy of Natural Sciences of Philadelphia. New series. Vol. 1. Part 1. 4to. Philada., 1847. From the Publication Committee.

Dr. Wilson deposited the following:

A list of the Genera of Birds, with their synomyma, and an indication of the typical species of each genus. By Geo. Robt. Gray. 2d edition. 8vo. London, 1841.

Voyage de la Corvette l'Astrolabe pendant les années 1826–'29, sous le commandment de M. D'Urville. Text. 1 vol. 4to., and 11 vols. 8vo. Plates, 8 vols. folio.

Voyage en Islande et au Groënland executé pendant les annèes 1835 and '36, sur la Corvette La Recherche; publié par ordre du roi sous la direction de M. Paul Gaimard. Text, 9 vols. 8vo. Plates, 3 vols. folio, et 1 vol. 8vo.

The Zoology of the voyage of H. M. S. Erebus and Terror, under the command of Capt. Sir James Clark Ross, R. N. during the years 1839 to '43; edited by John Richardson, M. D., and J. Ed. Gray, Esq. Nos. 6—16. 4to.

Saggio orittografico sulla classe dei Gasteropodi fossili dei Terreni Terziarii del Piemonte di Luigi Bellardi e Giovanni Michellotti. 4to. Torino, 1840.

Description des Cancellaires fossiles der Terrains Tertiaires du Piemont, par Louis Bellardi. 4to. Turin, 1841.

Dr. Griffith deposited the following:

Tableaux des corps organisés fossiles précédé de remarques sur leur petrification: par M. Defrance. 8vo. Paris, 1824.

A treatise on the management of Bees. By Thomas Wildmann. 8vo. London, 1778.

Harper's Family Library. No. LXI. The History of Nubia and Abysinia, by the Rev. Michael Russel. 12mo. New York, 1836.

Dr. Dickeson exhibited an Indian axe, of large size, which had been found in New Jersey.

The Publication Committee announced that the first number of the New Series of the Journal of the Academy was published, and ready for distribution to subscribers.

Stated Meeting, Dec. 14, 1847.

Mr. Vaux in the Chair.

Mr. Cassin read a paper, describing "Two species of Buceros, probably new, with a notice of the Buceros elatus Temm.;" which was referred to a committee composed of Dr. Wilson, Mr. Harris, and Mr. Gambel.

Dr. Leidy made some observations upon fossil remains of the horse in America, in connection with a memoir on the subject, read by him some time previously, and published in the last number of the Proceedings. He stated that in the 34th vol. of Silliman's Journal, p. 201, is an extract from a letter from W. M. Carpenter to Benj. Silliman, describing a fossil horse tooth found in Louisiana, associated with Mastodon, &c., which, from the figures and measurements accompanying the description, he referred to his species Equus Americanus. He further remarked that Mr. T. Conrad had informed him that Mr. T. Nuttall had found teeth of this same species on the Neuse river, N. C. Dr. L. also exhibited a fragment of a superior molar of the left side, from the collection of Dr. Dickeson, which, from the greater delicacy and degree of folding of the enamel upon the crown, (see fig. 6 in the plate,) he thinks probably belonged to a third American species. The depth of the central enamel folds is preserved in the fragment, and is 2 inches, 3 lines.

Dr. McEuen exhibited specimens of clarified ginseng root, (Panax quinquefolium,) which had been perforated by an insect; and desired information on the subject.

Stated Meeting, December 21, 1847.

Vice President Morton in the Chair.

DONATIONS TO MUSEUM.

Three hundred and forty-two crania of Birds, comprising 222 species; also three crania of Mammalia. Presented by Dr. Wilson.

Mounted skeleton of Boa constrictor. Presented by Messrs. Watson, Vaux, Ashmead, Lambert, Percival and Leidy.

Skeletons of Didelphis virginiana, and Mus musculus. Presented by Mr. Wm. G. Wistar.

Two species of Trilobites. Presented by Mr. Samuel Ashmead.

DONATIONS TO LIBRARY.

Archiv. für Naturgeschichte geründet von A. F. A. Wiegmann, herausgegeben von Dr. W. F. Erichson. No. 6, 1846. No. 2, 1847. Deposited by Dr. Wilson.

Oken's Isis, No. 7, for 1847. From the same.

Verzeichniss der doubletten des zoologischen Museums der Königl. Universitat zu Berlin nebst Beschreibung veiler bischer unbekanntner arten von Säugethieren, Vögeln, Amphibien und Fischen herausgegeben von Dr. H. Lichtenstein. 4to. Berlin, 1823. From the same.

The Literary Record and Journal of the Linnean Association of Pennsylvania College. Vol. 4. No. 2. From the Association.

American Journal of Agriculture and Science; conducted by Dr. Emmons aud A. Osborn, Esq., Nov. 1847. From the Editors.

Mr. Cassin read a paper entitled, "Descriptions of three species of the genus Icterus, presumed to be new; specimens of which are in the collection of the Academy of Natural Sciences of Philadelphia." Referred to Messrs. Wilson, Harris, and Gambel.

Dr. Morton made some remarks on an Indian cranium of singular form found near Richmond, on the Delaware; and also on a Chenook infant mummy. The cranium is interesting on account of its locality, and from its having the atlas vertebra continuous with the occipital bone. No trace of suture is visible; although the skull has pertained to an individual not exceeding 25 years of age.

The Chenook mummy is from the Straits of Fuca; the head is artificially compressed in a very remarkable manner, according to the custom of these people.

Annual Meeting, Dec. 28, 1847.

Vice President Morton in the Chair.

The Committee on Mr. Cassin's papers, describing new species of Buceros and Icterus, reported in favour of publication:

Description of a new Buceros, and a notice of the Buceros elatus, Temm., both of which are in the collection of the Academy of Natural Sciences of Philadelphia.

By John Cassin.

Buceros *albo-cristatus*, (nobis.)—Capite habente cristam, erectam, albamque; plumis totis subtiliter nigro terminatis; multis etiam ad basem nigris hoc colore sursum per scapum extendente.

Rostro nigro; macula magna, flavido-alba, ab basi ad mandibulæ superioris medium extendente.

Corpore toto, alis, caudaque nigris, nitore nonnullo virescente.

Remigibus, primariis et secundariis, maculis apicalibus, parvis et albis; primariorum nonnullis maculis parvis et albis pogonio externo.

Cauda longissima, gradata; duabus rectricibus intermediis cæteris longioribus pollicibus nonnulis; totis margine apicali large albo terminatis.

Long. tot. (exuviæ) ab rostri apice usque ad caudæ finem, 30 poll.; caudæ 17 poll.

Hab. In Africa occidentali.

Head with an erect crest, which is white, every feather minutely tipped with black; many feathers of the crest are also black at their bases, with that colour extending upwards along their shafts.

Bill black, with a large yellowish white spot extending from the base to the middle of the upper mandible.

Whole of the body, wings, and tail black, with a green lustre.

Primary and secondary quills with small white spots at their tips; several of the primaries have also small white spots on their outer webs.

Tail very long, graduated, the two middle feathers exceeding all the others by several inches; all the tail feathers largely tipped with white.

Total length (of skin) from tip of bill to end of tail, 2 feet 6 inches, of which the tail alone measures 17 inches.

Hab. Western Africa.

The specimen above described, I received several years since from Robert MacDowell, M. D., surgeon, attached to the colonial government of Sierra Leone, and an enthusiastic naturalist, who obtained it on the banks of the St. Paul's river.

This species resembles no other which I have seen, or of which I can find a description, and may at once be recognized by its white erect crest and long tail.

From the same gentleman I have received several other specimens of this genus, also from Western Africa, one of which is the Buceros elatus, Temm. of which a figure of the head and bill is given in Pl. Col., 521, and another may be the female of the same species; as such, however, I do not feel warranted in describing it at present, the bills of the two specimens differing more materially than I have been accustomed to seeing in the same species.

Two crania of the Buceros elatus are in the collection of Dr. Morton, one of which is undoubtedly from Western Africa. As this species appears to be known only from the figure of the cranium and beak above alluded to, I take the liberty of giving a description of the specimen which I suppose to be the male.

Buceros elatus, Temm. (Pl. Col.. 521, accuratissima figura cranii et rostri) (♂ juv. ?) Corpore et alis totis nigris, subtus pallidioribus, parvo aut nullo virore metallico.

Occipite subcristato, plumis latis, laxis et nigris.

Rectricibus duabus intermediis nigris; omnibus cæteris toto albis.

Long. tot. exuviæ, ab rostri apice usque ad caudæ finem 36 pollices.

Hab. In Africa occidentali.

Body and wings entirely black, paler beneath, with little or no metallic lustre.

Occiput with a sub-crest of broad lax feathers, which are black.

Two middle tail feathers black, all the others entirely white.

Total length (of skin) from tip of bill to end of tail 3 feet.

Hab. Western Africa.

The supposed female is very similar in the general colouring of the body, wings and tail, with the whole head and neck rufous chestnut, which colour extends to the upper part of the breast.

Descriptions of three new species of the genus Icterus (Briss,); specimens of which are in the Museum of the Academy Natural Sciences of Philadelphia.

By John Cassin.

Icterus *maculi-alatus, nobis.*—Capite toto, dorso, alis et cauda, nigris; hoc colore ad pectus, ut in cæteris hujus generis speciebus, extendente.

Scapularibus, alarum tectricibus minoribus, et corpore toto subtus a pectore ad caudam, flavis; hoc colore in pectore et scapularibus intensiore.

Alarum tectricibus majoribus maculis apicalibus, albis, subrotundis, fasciam in alam conspicuam facientibus.

Remigibus primariis, pogonio externo, prope apicem, attenuatis, et ubi coarctantur, extus albo-marginatis.

Long. tot. exuviæ, ab rostri apice usque ad finem caudæ 7½ poll., alæ 3.8-10, caudæ 3.4-10 poll.

Hab. Mexico; prope Vera Cruz.

Whole head, back, wings and tail black; this colour extending to the breast, as in other species of this genus.

Shoulders, lesser wing coverts, and entire under parts of the body, from the breast to the tail, yellow, darkest on the breast and shoulders.

Greater wing coverts with rounded white spots at their tips, forming a conspicuous bar on the wing.

External webs of primaries attenuated near their tips, and at the point of attenuation edged (externally) with white.

Total length of skin from tip of bill to end of tail 7½ inches, wing 3.8-10, tail 3.4-10 inches.

Hab. Mexico, near Vera Cruz.

This species resembles no other which I have met with, and may readily be recognized by its conspicuous and peculiar white bar on the wing, formed by large white spots at the tips of the greater coverts. Upon examination it will be found that these spots are on the outer webs only.

I have seen one specimen only of this species, which belonged to the Rivoli collection.

Icterus *auricapillus, nobis.*—Capite supra nitide aureo flavo.

Persona vittam frontis formante, oculos in totum complectente, ad pectus excurrente, nigra. Dorso, alis et cauda eodem colore.

Scapularibus, uropygio, caudæ tectricibus superioribus, et corpore toto subtus (a pectore) flavis.

Alis et corporis partibus cæteris prorsus sine albo.

Long. tot. exuviæ, ab rostri apice usque ad finem caudæ 7 poll., alæ 3. 6-10, caudæ 3½ poll.

Hab. Mexico et America meridionali.

Head above bright golden yellow.

Mask forming a frontal band, fully including the eyes and extending to the breast, black, which is also the colour of the back, wings, and tail.

Shoulders, rump, upper tail coverts, and entire under surface of the body, (from the breast,) yellow.

No white on the wings or on any other part of the body.

In a specimen which is probably that of a young bird, the black of the chin is mixed with yellow; no white whatever on any part of the plumage.

Total length from tip of bill to end of tail, about 7 inches, wing 3.6-10, tail 3½ inches.

Hab. Mexico and South America.

Resembles Icterus cucullatus, Swainson, more than any other species known to me, but I. cucullatus is very conspicuously marked with white on the wings, which is not the case in the species now described.

The I. cucullatus has black shoulders, its bill also is longer and more slender, and in other respects it is entirely different.

After a careful examination, with the advantage of the Academy's large collection of Icteri, I am rather surprised that I can find no description which will apply to this species, although I have seen it occasionally in collections for the last ten years.

Of the four specimens now in the collection of the Academy, two from the Rivoli collection are labelled Mexico, one also from that collection is without label of any kind, and the fourth was received by me from Brazil. I have also seen specimens said to be from the island of Trinidad.

Icterus *Giraudii*, *nobis*.—Adultus. Persona lata, vittam frontis formante, oculos in totum complectente, ad pectus excurrente, lœte nigra.

Alis et cauda nigris, sine maculis albis.

Corpore toto supra, subtus a pectore, capite supra, et scapularibus nitide citrino-flavis.

Plumis totis sine albo.

Long. tot. exuviæ, ab rostri apice usque ad finem caudæ 8 poll., alæ 4.1-10, caudæ 4 poll.

Juvenis, plumarum flavo saturate, tincto cum aurantio sordide aut cambogio.

Alis virescenti-marginatis.

Juvenissimus, plumarum flavo pallido, nigro in gulam inconspicuo.

Hab. Prope Bogota, in Nova Grenada.

Adult. Mask broad, forming a frontal band, fully including the eyes, and extending to the breast, fine black.

Wings and tail black, with no white marks whatever.

Head above, entire body above and below from the breast, and shoulders bright lemon yellow, no white on any part of the plumage.

Young. Yellow, the whole plumage tinged with dull orange or gamboge colour. Wings edged with greenish.

Very young. Yellow parts of plumage paler, in some parts nearly white black on the throat scarcely apparent.

Total length, skin of adult, from tip of bill to end of tail about 8 inches, wing 4.1-10, tail 4 inches.

Hab. Bogota in New Grenada.

Resembles Icterus Xanthornus, (Linn,) more than any other species with which I am acquainted or have found described, but is larger, and has the mask much broader.

In I. Xanthornus, the gular black scarcely exceeds the width of the under mandible, but in the species now described, it fully includes the eyes and the whole base of the bill. I. Xanthornus has also white markings on the wings, which is not the case in any stage of plumage represented by the five specimens now described.

I have named this beautiful species in honor of Jacob P. Giraud, Jr., Esq., of the city of New York, author of "The Birds of Long Island," and other important contributions to American Ornithology.

The following Reports were then read, and ordered to be published.

REPORT

OF THE RECORDING SECRETARY

For the years 1846 *and* 1847.

It has now been two years since the last annual Report of the Recording Secretary was laid before the Academy. This paper will therefore include a brief statement of the Transactions of the Society for the two years past.

During the year 1846, twenty-six Correspondents and five Members were elected. Twenty communications, written by the following named gentlemen, have been published in the Proceedings, viz.: One paper by Mr. T. A. Conrad, entitled, "Descriptions of new species of Fossil and recent Shells and Corals;" one by Mr. Locke, "On an Asterias from the Blue Limestone of Cincinnati;" one by Mr. Edward Harris, "On the difference of level between the waters of the Gulf of Mexico and those of the Atlantic Ocean;" one by Robert W. Gibbes, M. D., of Columbia, S. C., "On the Fossil Squalidæ of the United States;" one by Mr. William Gambel, being "Remarks on the Birds observed in Upper California;" two by Samuel Geo. Morton, M. D., viz. a "Description of two new species of Fossil Echinodermata, from the Eocene of the United States," and "A description of two living Hybrid Fowls, between Gallus and Numida:" two by Edward Hallowell, M. D., viz., "Description of a new species of Bat, from Western Africa," and "On the Anatomy of Harpyia destructor, Cuv., or Harpy Eagle of South America;" one by F. E. Melsheimer, M. D., being "Descriptions of new species of Coleoptera of the United States;" one by Mr. John S.

Phillips, being "Description of a new freshwater shell, and observations on Glandina obtusa, Pfeif;" five by Joseph Leidy, M. D., viz., "Remarks upon the Anatomy of the Abdominal Viscera of the Sloth, Bradypus tridactylus, Linn.," "On the Anatomy of Spectrum femoratum, Say.," "Description of a new genus and species of Entozoa," "On the mechanism which closes the wings of the genus Locusta," and "On the situation of the olfactory sense in the terrestrial tribe of the Gasteropodous Mollusca;" two by Prof. S. S. Haldeman, viz., "Description of Unio Abacoides, a new species," and "On several new genera and species of Insects;" one by Richard Owen, F. R. S., &c., being "Observations on certain Fossils from the Academy of Natural Sciences, of Philadelphia; and one by Mr. John Cassin, viz., "Note on an instinct probably possessed by the Herons, (Ardea, Linn.)"

The following amendments to the By-Laws have been made during the same year, (1846) viz:

Chap. V. Art. VI. to commence thus: "The duty of the Librarian shall be to attend daily at the Hall, from 11 o'clock, A. M. to 2½ P. M., &c.;" and to add to the same chapter,

"Art. VIII. The chairman of the Curators shall attend daily at the Hall, from 2½ o'clock, P. M., until sunset, to perform the duties of his office."

From the commencement of the present year (1847) to the present time, there have been elected thirteen Correspondents and nineteen Members.

In the first five numbers of this year's "Proceedings" have been published thirteen valuable original written communications, as follows: one by Prof. S. S. Haldeman, being "Descriptions of several new species and one new genus of Insects;" one by Mr. M. Tuomey, State Geologist of South Carolina, being a "Notice of the discovery of a cranium of the Zeuglodon;" one by Mr. John Cassin, being a "Description of a new rapacious bird in the Museum of the Academy of Natural Sciences, of Philadelphia;" three by Joseph Leidy, M. D., viz., "Description and Anatomy of a new and curious subgenus of Planaria," "Description of new species of Planaria," "On the fossil Horse of America;" one by Lieut. Abert, U. S. A., being a "Description of Ortyx Squamata;" one by Major George A. M'Call, being a "Description of a supposed new species of Columba inhabiting Mexico, with some account of the habits of the Geococcyx viaticus, Wagler;" one by Robert W. Gibbes, M. D., of Columbia, S. C., being a "Description of a new species of Squalides from the Tertiary Beds of South Carolina;" one by Dr. J. W. Dawson, of Pictou, Nova Scotia, "On the Gypsum of Nova Scotia;" one by Edward Hallowell, M. D., being a "Description of a new species of Coluber inhabiting the United States;" one by Mr. T. A. Conrad, being "Observations on the Eocene Formation, and descriptions of one hundred and five new fossils of that period, from the vicinity of Vicksburg, Mississippi, with an appendix." In addition to these communications, there are several papers in progress of publication for the November and December number of this year. A number of very

valuable and interesting verbal communications by different members of the Academy, have also been published in the Proceedings.

The following alterations in the By-Laws have been made, viz.,

Art. VII. of Chap. VII. to read as follows: "Members may borrow books, the property of the Academy, from the Librarian, on signing a promissory note for fifty dollars, which shall become void on the book being returned."

Art. VIII. of same Chapter: "But no works shall be loaned from the Hall on any account whatever, except those marked with an asterisk (thus *) in the catalogue, unless by an affirmative ballot vote of three fourths of the members present when the application is made; and in case of deposited books, the written consent of the depositor having been previously obtained, the name of the borrower and the title of the book to be recorded on the Minutes, and security given for its safe return, by note or otherwise, for the full value thereof according to the estimate of the Librarian or Library Committee."

Since the last Annual Report, the affairs of the Academy have been in an exceedingly flourishing condition. An addition of thirty feet has been made to the building, and the sessions of the Academy are held in the Library, a comfortable apartment in the basement of this addition—a great improvement over the immense room in which its meetings were formerly held. During the past year, the lecture room has been altered and adapted to the purposes of the Museum—an alteration greatly needed in consequence of the immense increase in the different departments through the munificent donations and deposites lately received by this Institution. A report on the state of these departments belongs more properly to other officers of the Society; it will therefore be sufficient here simply to state, that during the period embraced by this report, a greater impetus has been given to the Academy than it has received at any previous period of its existence. During the last two years, thanks to the noble liberality of a generous member, and to the exertions of others, it has made such rapid strides that, in the language of one of our Vice Presidents, "an hundred years of ordinary prosperity could not have realized so much." It has completely thrown all lethargy aside; and, fully aroused and energetic, is now performing its full quota towards the cause of scientific discovery and research.

All of which is respectfully submitted by

JOHN LAMBERT,
Recording Secretary.

December 28, 1847.

REPORT

OF THE LIBRARIAN

For 1847.

The Librarian is enabled on the present occasion to exhibit to the Society a highly flattering statement of the existing condition of the Library, and to congratulate the members on its rapid increase and the great additional value which it has acquired during the year, and the peculiarly auspicious circumstances under which it has been placed since the last Annual Meeting.

At that time, the Library occupied ranges of cases on either side of the large Saloon or Hall in common with the collections of the Society. These accommodations were imperfecty adapted, either for a proper display of the Books, or for such an arrangement of them as would afford easy and convenient reference. Many of the cases were likewise greatly crowded, their contents in consequence abused and injured, and in several instances it was necessary to distribute works belonging to a particular department into cases at a considerable distance from each other. In addition, the want of proper daily ventilation of the Hall in the summer season, and of regular warmth during the winter, and the unavoidable exclusion of the members from the Library on those days when the Hall was open to the public, were all serious obstacles to the prosecution of study, on the very spot where, on the contrary, every facility and advantage should be afforded. For the latter reasons especially, the necessity of a separation of the Library from the Museum had been long felt and acknowledged. Happily, through the spontaneous liberality of an individual member, too favourably known among us to require to be named, the Society has been enabled to remove all these objections and disadvantages, and I have the pleasure this evening to present this report in a new apartment, expressly designed for the purposes of a Library and Meeting room, and possessing every convenience that could be desired.

The removal of the Books from the Hall to this room was commenced in the latter part of April, and their arrangement in the cases was completed about the close of the following month. In the arrangement, the principal object has been to facilitate access to those works likely to be in most request, and accordingly the different departments of Natural History occupy cases on the floor of the Library, commencing with general Natural History, and followed by Botany, Conchology, Geology, Ornithology, &c. The remaining cases on the floor contain Anatomy and Physiology, the Journals, and the large and valuable collection of works on Antiquities and the Fine Arts. On the gallery, are the various Dictionaries of Arts and Sciences and Encyclopædias, Physical Science and Chemistry, History, Voyages and Travels, Biography, &c.

By a late regulation of the Society, the Librarian is required to be in attendance at the Library daily during a part of the forenoon, and in the afternoon his place is supplied by the Chairman of the Curators.

From these measures, the happiest effects have already resulted, and have fully equalled expectation. Beside the greater protection necessarily afforded to the Library by a constant and daily supervision of it, they have tended, per-

haps more than any others since the origin of the Institution, to produce a better knowledge, and more correct appreciation of the truly legitimate objects of the latter, to invite and encourage study and research, and, not the least of all, to bring together, and to create more frequent intercourse between, the members of the Society.

The number of additions of all descriptions to the Library in the various departments, during the present year, is exhibited in the following table :—

	Vols.	Parts. Nos. Livs. &c.	Pamphlets.		Vols.	Parts, Nos. Livs. &c.	Pamphlets.
General Nat. History and Zoology,	184	103	3	Brought over	453	250	73
Botany,	21	28	8	Agriculture,	1		3
Conchology,	41	13	6	Voyages and Travels,	34		1
Geology,	60	38	25	Languages,	1		1
Ornithology,	79	55	9	Bibliography,	17		
Herpetology,	12			Education,	2		
Ichthyology,	2			Geography,	11		
Entomology,	6	12	1	Journals, Annals, Trans. & Proceed. of Soc., Memoirs, &c.,	97	109	
Mineralogy,	2						
Anatomy and Physiology,	11		9	Biography,	1		
Helminthology,	1			History,	2		
Physical Science and Chemistry,	31	1	8	Useful Arts,	2		
				Antiquities,	8		
Medicine,	3		4	Addresses, Reports, &c.,	1		4
Carried over,	453	250	73	Totals	630	359	82

Making a total of 1072 additions of all descriptions to the Library in 1847.

Of the whole number, there were presented by authors 54; by editors 31; by members, correspondents and others 119; by Societies 56; obtained by purchase or exchange 25; deposited by Dr. Thomas B. Wilson 586; by Dr. R. E. Griffith 163; and by J. Price Wetherill, Esq., 36. Two charts were derived from the U. S. Treasury Department; one from Mr. R. C. Taylor, and one from Dr. Wilson.

The above statements show a greater increase in the Library during the last twelve months, than has occurred at any period since that in which it received the noble contributions of its early benefactor William Maclure. It will be seen also how very large a proportion of the whole number of additions has been derived from our fellow member Dr. Wilson. From a reluctance to occupy the time of the Society too long with this report, I refrain from a recapitulation of the titles of the numerous splendid works deposited by this gentleman, and must content myself therefore with referring those, who may be desirous of forming some estimate of their great value, both in actual cost, and as works of Science, to the printed Proceedings, in which they have been already fully announced. Nearly all of them have been imported from abroad expressly

for this Library, and have been placed here by him with the sole object and desire to foster and encourage a spirit of investigation, especially in the departments of Ornithology, Geology and Conchology.

In these acts the depositor has evinced an amount of disinterested generosity, and of zeal for the promotion of science, rarely to be found combined in the same individual, and which have secured for him the lasting esteem and gratitude of all connected with the Institution.

To Dr. Griffith, the Society also owes its highest acknowledgements for the deposit of a large number of works in the various branches of Science, many of them very rare and old, and probably contained in few public or private Libraries in this country.

Through Mr. Wetherill, the Library has been enriched the present year, with several important and valuable Geological works, and it is also indebted to him for completing its series of others, parts only of which it previously possessed.

In closing this report, an opportunity is afforded me of stating to the Society that, during the ensuing year, the Library Committee, in conjunction with the Librarian, propose to select from the numerous miscellaneous works in the collection, such of them as may appear either extraneous to the objects of the Society, or of little value or utility in any form to the members, and to exchange these for other works, either on subjects of Natural History, or of an otherwise really useful character, and also to allow room for further additions of the latter description.

A list of those proposed to be rejected will, however, be first submitted to the Society, and its consent fully obtained, before any action will be taken by the Committee.

WM. S. ZANTZINGER,
Librarian.

December 28th, 1847.

REPORT

OF THE CURATORS

for the year 1847.

At no time since the Academy of Natural Sciences of Philadelphia was instituted, has its condition been more prosperous than at present; and, indeed, it is such as to form an important epoch in the progress of Natural Science in America. This successful state is mainly attributable to the interest which our fellow-member and co-labourer, Dr. Thomas B. Wilson, has latterly taken in it. In 1846, this gentlemen, through his brother, Mr. Edward Wilson, of Lydstep House, South Wales, a Correspondent of the Academy, purchased, in Paris, the large and magnificent collection in ornithology of the Duc de Rivoli, which, upon importing to this country, he resolved to deposit in the Academy, and at his private expense increased the building to an extent commensurate with the end in view—the accommodation of this vast addition to the Museum. More space was also

obtained in the museum, by removing the library, which had occupied several ranges of cases, into the basement room of the new part of the building.

In May, 1847, Dr. Wilson made a second large purchase in Ornithology, in England, of Mr. A. Gould's splendid collection of Australian birds, which renders a further increase of space necessary for its accommodation. For this purpose, Dr. Wilson obtained ready permission of the Academy to convert its little used lecture room into part of the museum, which work is rapidly progressing towards completion. The north east basement room is also undergoing change for the same object. In accordance with the original plan of the building, all the additions and improvements to it have been made fire-proof. When completed, the collections of the Academy will be contained in three rooms, as follow :

The first or upper room, or hall, is one hundred and ten feet in length, by forty-two in breadth, and is lighted from above, and from the east and west extremities. On the north and south sides are three galleries, and four ranges of vertical cases, and a range of foot cases at the outer edge of the second gallery. On the west side are three galleries and four ranges of vertical cases, on the east side two galleries and two ranges of vertical cases. The two lower ranges of cases on the south side, for two-thirds the length of the room, corresponding to the old part, are occupied by Dr. S. G. Morton's extensive series of human and other crania, and the collection in Comparative Anatomy. The lowest range of cases on the north side, for the same extent as those just mentioned, contains the collection of Mammalia; and the range above this, Dr. Dickeson's collection of American antiquities and the Carpological cabinet, and leads into the herbarium room in the north east corner. All the remaining ranges of cases mentioned contain the Ornithological collection. The floor of the hall is to be occupied by ranges of horizontal, centrally vertical, double cases for the reception of the collection in Palæontology. One of these ranges has been already finished, and part of the collection arranged in it; the others are in progress of construction. At the east extremity, on each side, is a strong vertical case, containing the skeletons of large fossil Sauri in massive slabs of lias limestone.

The second, or east basement room is forty-one feet in length by forty in breadth, with a gallery all around it and communicating with another running through its centre. This room will be appropriated to the Mineralogical, Conchological, Herpetological, and Ichthyological collections.

The third, or north east basement room is sixteen feet by nine feet, has a gallery on three of its sides, and is to accommodate the collections of Crustacea and Entomology.

The state of the different departments of the museum, as they at present exist, with the additions which have been made during the past year, will now be briefly referred to.

Mammalogy —The expensive character of the larger objects in this branch of Zoology, as well as the amount of space required for their proper accommodation, have prevented the Academy from accumulating any great number of them. We possess most of the North American species, besides

a few foreign ones. During the past year a comparatively large number has been received, and it is to be hoped that efforts will be made towards a further increase. We enumerate for 1847, eighty mounted specimens and five skins of Mammalia, chiefly of foreign species, presented by Dr. Wilson, and six specimens presented by Dr. Thomas S. Savage, Mr. Germain, &c.

Ornithology.—Of this department, in which at this time we stand equal to any in the world, a special report is hereto appended, prepared by Mr. John Cassin, who, with Mr. Wm. Gambel, has particularly attended to its arrangement.

In Oology, belonging to the department of Ornithology, in the past year we received in donations, eggs of 79 species of birds, principally from Dr. Wilson and Mr. William H. Edwards.

Herpetology.—Our collection of reptilia is a large and valuable one. A part of it however is not in the best state of preservation, but will be early attended to in the coming year, and before any loss of consequence is sustained. During the past year 88 species of Reptilia have been presented, chiefly by Drs. Hallowell, Savage, Wilson, and Hildreth.

Ichthyology.—In this department we have not made much advance. It is to be hoped the Academy will hereafter encourage this branch more than it has done. During the past year, Dr. Thomas S. Savage presented several jars of fishes from Western Africa, many of which are probably new, and we are indebted to several members for a large specimen of the rare Squatina Dumerili.

Mollusca.—The arrangement of the conchological cabinet has been kindly undertaken by Dr. R. E. Griffith, who with the greatest liberality is also incorporating with it his own private collection, which, as he progresses, he presents to the Academy. In this step he has been followed by the ever liberal Wilson, so that when the collection is fully arranged, with the addition of the two private cabinets, it will contain between 9 and 10,000 species, many of them of the most valuable character.

During the past year there have been presented 1209 species of shells by Dr. R. E. Griffith; 393 species by Dr. T. B. Wilson; 200 species by Wm. Thompson, Esquire, of Ireland; 40 species by Mr. C. B. Adams; 31 species by Mr. T. Conrad; and 30 species by several others, in all 1893 species, and almost 2300 varieties.

Entomology.—The destruction of the Academy's once fine collection of Coleoptera and Lepidoptera, for a while quite discouraged those members who were particularly interested in this departmeut, but the general stimulus which has been infused into the Academy by the rich contributions to other departments, has aroused them once more to exertion in the formation of a new collection, which already bids fair to surpass the one lost. Our fellow member, Mr. R. E. Kilvington, during the past year, made a liberal donation of 1035 specimens, comprising 345 species of British Lepidoptera, and Dr. T. S. Savage has recently presented a collection in alcohol, of large and

magnificent Coleoptera from Western Africa, many of which are new species.

Crustacea.—Our collection of Crustacea numbers 162 species, and was carefully arranged during the past summer by Dr. Lewis R. Gibbes, of South Carolina, and catalogued by Dr. R. Bridges. Twelve species have been presented the past year by several of the members.

Zoophytes.—Eighty-nine specimens of fifty-nine species of corallines and sponges, and three species of Echinodermata have been presented in the course of the last year.

Comparative Anatomy.—Additions still continue to be made to Dr. S. G. Morton's large and magnificent series of human crania, which now contains upwards of seven hundred specimens of many nations and of various epochs.

At present there appears to be a strong disposition amongst the members to attend more particularly to the heretofore rather neglected department of Comparative Anatomy. During the past year 385 crania, comprising 260 species of animals, have been presented, principally by Drs. Wilson, Morton, and Huffnagle. Among the number may be particularly mentioned the very large and perfect specimens of crania of *Crocodilus vulgaris* and *Gavialis gangeticus*. Eight mounted skeletons have also been presented, among which are a fine and large skeleton of *Felis tigris* from Dr. Huffnagle, and a beautiful skeleton 12 feet long of *Boa constrictor* from several of the members.

Botany.—The botanical collection comprises upwards of 40,000 species of dried plants, and about 1000 species of dried fruits. It has been kept in a good state of preservation up to the present time, but has lately been slightly injured by insects; the further ravages of which will, however, be prevented.

Palæontology.—The collection of organic remains which occupied the range of cases on the upper gallery of the south side of the hall, has been removed to the cases prepared for its reception on the floor of the hall, and is in progress of arrangement by Dr. Wilson. It has received very extensive and invaluable accessions during the past year, and when completely arranged will contain in the neighbourhood of 20,000 specimens. In it are the valuable collections of Mr. R. C. Taylor, J. Price Wetherill, Esq., Dr. Morton, Mr. T. Conrad, Dr. Dickeson, Miss Benett, &c. The last year Dr. Wilson deposited in the Academy five very nearly perfect skeletons of large fossil Saurians. One of these is the Plesioraurus Hawkinsii, three are species of Ichthyosauri, and the fifth is the Telosaurus, or Gavial de Boll of Cuvier.

Mr. Conrad presented 2000 specimens from the Miocene of France, the Eocene, cretaceous, oolitic, mountain limestone, and Silurian formations of England and France. Mr. R. C. Taylor has presented an extensive collection of very large and beautiful specimens of coal plants of Pennsylvania, besides numerous other fossils, which have not yet been examined. Numerous

specimens of coal plants from Prof. W. R. Johnston, Green sand fossils of Germany from Dr. F. Roemer, Silurian fossils of New York from Mr. W. A. Pease, and many others, have been received. Dr. Wilson has also deposited about 10,000 fossils, which are already in progress of arrangement, and which he intends presenting to the Academy so soon as a list can be made out.

Mineralogy and Geology.—The mineralogical collection is at present carefully packed up in boxes, preparatory to its removal to the north-east basement room, now undergoing alteration. We are indebted to the generosity of Mr. R. E. Taylor for a donation during the last year, of a large collection of rocks, comprising several thousand varieties from different parts of North America and the West India Islands.

Forty specimens of minerals, some of them very beautiful, have been presented by members and others during the past year.

In the course of the arrangement of the mineralogical collection, which several gentlemen have kindly consented to undertake, we have good reason to believe that large additions will be made from the private cabinets of members interested in this department.

Physics.—The last year Mr. Henry Seybert deposited in the Academy a valuable chemical apparatus for the use of the members which we hope ere long may prove of essential service to the Institution.

The great increase and importance of the museum and library of the Academy, have rendered it necessary that both should be under regular daily supervision. The Academy therefore has made it the duty of the chairman of the Curators and Librarian to be present alternately during certain hours daily for this purpose.

We conclude this report by stating that the greatest good feeling and harmony prevails among the members of the Society, all of whom desire to promote the interests of this noble Institution and the cause of science in general.

Joseph Leidy,
Chairman of Curators.

December 28th, 1847.

SPECIAL REPORT

ON THE

ORNITHOLOGICAL DEPARTMENT.

The operations in the Ornithological department of this Academy have been of so highly important, not to say of so extraordinary a character, during the year now about closing, that the undersigned Curator, who has been exclusively engaged in that department, hopes he may be allowed to submit a special report, in compliance with a request made by the chairman of the Curators.

I have the high gratification of reporting, that through the ardent attachment to the study of the Natural Sciences, and the great personal enterprize also, of a member of this Society, a collection has been organized, which, as

it now stands, is one of the first extant, and when further additions already engaged shall have arrived, the Ornithological collection of this Academy will be probably the most extensive and complete in the world.

The collection, well known in Europe as that of the Prince Massena, Duke of Rivoli, has been received. This large collection, the arrangement of which is now nearly completed, consists of not less than twelve thousand five hundred specimens, from all parts of the world, and in a very superior state of preservation.

Where so many of the families and genera of birds are alike fully represented, it is not easy to pronounce in which of these a collection is most remarkable: this distinction, however, in the Rivoli collection, I am inclined to award to the Rapacious birds, in the various genera of which it is not only almost absolutely complete, but very many of the species are illustrated by series of specimens showing varieties of plumage, or distinctions of sex, age and season, in the most satisfactory manner. Of the Aquila chrysaetos, (Linn.) or Golden Eagle, for instance, there are six specimens: of the Aquila Bonellii, (Bonap.) also six; of the Aquila nævia, (Gm.) five; of the Aquila vulturina. (Daud.) a large black Eagle from South Africa, four specimens; of the Haliætus vocifer, (Daud.) six; of the Helotarsus ecaudatus, (Daud.) six; of the Pernis apivorus. (Linn.) ten; of the Buteo unicinctus, (Temm.) nine; of the Buteo aguia, (Temm.) nine specimens; and many of the smaller or more variable species are even more fully represented. Of the Astur magnirostris, (Gm.) for instance, we have fifteen specimens, of the Accipiter nisus, (Linn.) thirteen, of the Meliecrax musicus, (Daud.) twelve, of the Circus cinerascens, (Mont.) fifteen, of the Falco peregrinus, Gm., fourteen, and of one species, the Falco sparverius, Linn., twenty-six specimens were not considered too many to illustrate its supposed changes and varieties; and even with these the Duke or his Curator appears to have been scarcely satisfied, for among the specimens in the collection, marked as undetermined, were six others of this species. I mention this case, more particularly, because it affords an example of the extraordinary care and attention shown by the former proprietor of this collection; not even a variety of any possible consequence in the representation of a species, having been neglected, when attainable, notwithstanding the previous existence in the collection, of numerous specimens of the same species.

Of Vultures, all the known species, except three, are in the Rivoli collection; one of which, I may observe, has been obtained from another source.

Taking into consideration the comparative difficulty of collecting Rapacious birds, and more especially of forming such series of specimens as are to be found in this collection, its great scientific value in the Order Raptores, is sufficiently evident.

Nor are other Orders far behind the Raptores, and it is rather a remarkable as well as interesting character, that in many genera the species of which are of more difficult attainment, such as the larger swimmers, waders and gallinaceous birds, the Rivoli collection is particularly complete.

Of the Natatores or swimming birds, the collection is scarcely second to

that of the Rapacious birds. I beg leave to refer to the splendid collections of the species constituting the various genera of geese, ducks, cormorants and gulls, now beautifully arranged by Mr. Gambel, for the truth of my assertion. The genera Diomedea, Procellaria and Thalassidroma, are also very amply illustrated. The specimens of the several species of Pelicans, are highly interesting, as are also those of Alca impennis, Linn., Phaleris cristatella, Gm., Mormon glacialis, Linn., and others of species which like these, only inhabit the Arctic regions.

The magnificent series of specimens of the Flamingos, also will be found especially worthy of notice.

The order Grallatores, or wading birds, is very extensively represented; the various genera of plovers, herons, storks, ibises,—in fact, scarcely a genus can be named which is not fully illustrated. The genus Grus, or cranes, is especially worthy of attention. I may notice, too, the various species of Ibis, particularly the Ibis religiosa, Cuv., or sacred Ibis of the Ancient Egyptians, of which a *suite* of specimens will be found in its proper place.

Of the Rasores or Gallinaceous birds, the Pigeons number one hundred and twenty species.

The genera Perdix, Phasianus, Pterocles, Tetrao and Otis are richly represented, as are also the beautiful genera Gallus, Lophophorus and Tragopan.

I may be allowed to notice especially, splendid specimens of Pavo muticus, Linn.—of the Phasiani Sœmmeringii, Temm., Stacei, Vigors, and veneratus, Temm., of Gallus Sonneratii, Temm., of Gallus Lafayettii, Less. of the Polyplectron emphanum, Temm., very fine specimens of the Argus giganteus, Temm., and also a specimen of that singular bird, the Apteryx australis, Shaw., of which, at quite a recent period, but one specimen was known in Europe.

In the great order Incessores or Perching birds, the Garrulinæ, Icterinæ, Tanagrinæ, Laniinæ, Turdinæ, Caprimulginæ, and the Scansorial subfamilies generally deserve particular notice.

Of Paradise birds there are all the known species.

Of the Hornbills (Buceros,) six species only are wanting.

Of the various genera of Parrots, there are upwards of two hundred species.

In short, so extensive and comprehensive is the Rivoli collection, that it is evident an extraordinary attachment to natural history, a superior knowledge of Ornithology, constant assiduity during a long period, and opportunities of no common order, must alike have contributed to its formation.

Besides the Rivoli collection, others of great interest have been received, one of the most important of which is that of M. Bourcier, an Ornithologist of the city of Lyons, well known by his papers in the Annales des Sciences Physiques et Naturelles de Lyons, the Revue Zoologique and other journals.

This collection consists of about one thousand specimens, and is almost exclusively composed of Conirostres, and Scansores; a large portion of

which are South American and Mexican species. M. Bourcier's collection contains specimens of nearly all the little known species of New Grenada, and is especially rich in the beautiful Tanagers of that country.

The collection made in California by Mr. Wm. Gambel, I am happy to state, has also been added to the collection of this Society. This collection contains numerous and remarkably beautiful specimens of the birds of Western America, many of which were not previously in any collection in the United States, and are of rare occurrence in those of Europe.

The specimens of the hitherto unknown species described by this enterprising young naturalist, in the Proceedings and Journal of this Academy, are especially interesting, as well as those of Tyrannulæ Saya (Bonap.) and nigricans, Sw., Ptilogonys Townsendii, Aud., Pica Nuttallii, And, Pipilo fuscus, Sw., Picus Harrisii, Aud., Picus scalaris, Wagler, Lanius elegans, Sw., Hæmatopus Bachmanii, Aud., Strepsilas melanocephalus, Vigors, and many others.

Mr. Edward Harris has presented to the Society several specimens of unusual value to the collection, of which may be mentioned a specimen of Tyrannus verticalis, (Say,) shot near his residence at Moorestown, N. J. being the first instance of the appearance of this species so far west or north.

A series of specimens of the genus Parus, including the Parus septentrionalis, Harris, has also been presented by this gentleman.

A collection made by the writer during a period of about fifteen years is also merged into that of the Academy. It is composed principally of birds from Western Africa, collected under some advantages, and of the rarer birds of North America. Of the African species, I may be allowed to mention a series of specimens of Musophaga violacea, Isert, including males, females and young birds;—specimens of Turacus giganteus, Viell.—Buceros elatus, Temm.—Cuculus Klaasii, Le Vaill.—Pyrenestes ostrina, Viell, and others.

Of the American species, those of most interest are a series of specimens of Archibuteo sanctijohannis, (Gm.) including the perfectly adult bird, and the rare stage of plumage figured by Wilson as a variety; also several specimens including the perfect adult of Buteo Pennsylvanicus, (Wilson,) or broad winged Hawk; a specimen of Astur atricapillus, Wilson, from New Jersey; a series of nine specimens of Astur Cooperi, (Bonaparte;) also, a specimen of Bombycilla garrula, (Linn.) shot near this city; several specimens of Trichas Philadelphia, Wilson, Sylvicolæ maritima, (Wilson), agilis, (Wilson), cœrulea, (Wilson), and many others of this genus.

There will also be found several specimens of Rallus Jamaicensis Briss. obtained near this city; a series of specimens of Anser hyperboreus, (Gm.) also a specimen of Bernicla nigricans, (Lawrence), a recently discovered American species, of which this is the third specimen.

Various collections, including several hundred specimens from the celebrated Ornithologist M. Temminck of Leyden, and a large number from the

British Museum, have been secured for this Society through the exertions of Mr. Edward Wilson, now residing in England.

To this gentleman the collections of the Society are indebted in a degree second only to that of his distingnished brother.

Independently of his immediate agency in obtaining the Rivoli collection, and that of M. Bourcier, the collections made by him, personally, in various cities of Europe evince at once his love of Natural History, his excellent judgment and his just appreciation of the wants of the natural sciences in this his native country.

Mr. Wilson's ornithological collections, in the aggregate, amount to several thousand specimens, a portion of which, only, has been received ;—but that portion contains some of our most valuable acquisitions. I will mention a fine specimen of Haliætus pelagicus, (Pall.) from Behring's Straits, a species which is probably the largest of known Falconidæ, and is especially interesting to American Ornithologists from the fact of its being an inhabitant of the northern regions of this continent ;—also a beautiful specimen of the Meleagris ocellata, Temm., the second species of Turkey discovered a few years since in Yucatan.

For almost the whole of the large collection of Humming Birds the Society is also indebted to the same gentleman.

One other collection, which is to be delivered to this Society early in the coming year, remains to be noticed, and that is Mr. John Gould's collection of the birds of Australia.

When I inform the Society that this collection contains specimens of all the known Australian birds, except five species, and of the nests and eggs of a large number, its peculiar value will be immediately understood I may be excused for remarking, however, that Mr. Gould's collection acquires additional interest from the consideration that it contains the original specimens from which many of the numerous species described by him were first characterized, and that the specimens comprised in his collection, are those from which the drawings were made for his latest and splendid work, "The Birds of Australia."

The number of specimens now contained in the collection and those which will be received in the course of the ensuing year, according to arrangements now completed, may be estimated as follows :

Duke of Rivoli's collection, ...	12500	specimens
M. Bourcier's, "	1000	"
Mr. Edward Wilson's collections, . . .	4000	"
Mr. Gambel's and Mr. Cassin's collections, .	1000	"
Mr. Gould's collection, ...	2000	"
Former collections of the Academy, . . .	2500	"
	23000	

As premised at the commencement of this report, this magnificent result is the work of an individual member of this Society, himself a naturalist of excellent and varied acquirements, who in the formation of this and other

collections, and a library also, in natural history, may be said to have realized the happiest hopes of the American student and the American naturalist, and to have marked an era which must ever be acknowledged as the most important in the history of the Zoological sciences in this country.

The arrangement of this immense collection, excluding duplicates. will, in all probability be completed during the coming year. and it is also probable that at the next annual meeting of the Academy. a report can be made of the exact number of species and specimens exhibited.

It is to be understood, however, that other extensive additions are contemplated. which if received and incorporated into the present collection, may of course, naturally affect the issue to which I allude.

All of which is respectfully submitted by

John Cassin,
Curator.

December 28th, 1847.

A note was read from Prof. Haldeman, dated Columbia, Penn., Dec. 27, 1847, requesting that the following correction of his published papers may be noticed in the present No. of the Proceedings.

The genus Heterodromia, *Hald.*, Proceedings Academy, vol. 3, p. 127, seems to be identical with Psammœchus, *Boudier*, although the prothorax is not wider than long, as described by Latreille.

The proposed genus Chorea, *Hald.*, Proceedings Academy, vol. 3, p. 150, is founded upon the female of Cerophytum, unless the structure of the posterior femora should be found to differ. Neither of these rare genera has been yet announced as American, and but one species of each is found in Europe. M. Lucas has described a species of Psammœchus from Algeria, which he names *Boudieri*.

The Academy then proceeded to an election for Officers for 1848. The following result was announced by the Tellers:

President.

William Hembel.

Vice Presidents.

J. Price Wetherill,
Samuel George Morton.

Corresponding Secretary.

Walter R. Johnson.

Recording Secretary.

John Lambert.

LIBRARIAN.

Wm. S. Zantzinger.

TREASURER.

George W. Carpenter.

CURATORS.

Joseph Leidy.
William S. Vaux.
Samuel Ashmead.
John Cassin.

AUDITORS.

Robert Pearsall.
William S. Vaux.
Robert Bridges.

PUBLICATION COMMITTEE.

William S. Vaux.
Walter R. Johnson.
Robert E. Griffith.
Samuel Ashmead.
William Gambel.

ELECTION OF MEMBER AND CORRESPONDENTS.

Joseph Pancoast, M. D., of Philadelphia, was elected a Member, and the following were elected Correspondents of the Academy:

William Lonsdale, Esq., F. G. S., of London.
Sir J. F. W. Herschell, do.
Michael Faraday, Esq., F. R. S., do.
Prideaux John Selby, Esq., Northumberland, England.
Prof. Nillson, of Lund, Sweden.